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1st Place
Aberdeen Proving Ground

US Army Corps of Engineers®

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National Team meets to discuss Installation Support

by Fidel J. Rodriguez

"The ISO mission is to serve as regional direct support elements in service to Major Commands, Installation DPWs and other activities, offering technical public works, RPMA and O&M services and guidance within their Division's regional geographical area of operations."

Atlanta, September 22-23. A national team of installation support community members met here to discuss the future of Corps support to Installations. Representatives from the Directorate of Military Programs, Major Commands, Corps Divisions, and installation Directorates of Public Works gathered to define the purpose, mission and operating principles of proposed Public Works Service Centers.

Other topics the team addressed included staffing, locations, performance measures, budget and funding requirements, DPW needs, MACOM involvement, and the contribution the future Installation Support Division would be making.

During the meeting, it became clear that previous proposals for "Public Works Centers" and "Public Works Service or Support Centers" colored people's ideas of the new organizations' purpose. Renamed "Installation Support Offices" (ISO), the regional groups will hold a charter to facilitate Corps support to installations within their regions.

Locations

The National Team concluded that a main cell of six staff members, supplemented by forward staff of one or two people would best serve installation needs. The locations of the main offices and their supporting forward positions will be:

- **Northwestern Division:**
  Kansas City District (6)
  Seattle District (2)
- **Pacific Ocean Division:**
  Honolulu (6)
  Korea (2)
- **North Atlantic Division:**
  Fort Hamilton (6)
  USAREUR (2)
- **Southwestern Division:**
  Dallas/Fort Worth (6)
  Fort Polk (1)
  White Sands Missile Range (1)
- **South Pacific Division:**
  Sacramento District (6)
  Fort Huachuca, (1)
  Fort Irwin (1)
- **South Atlantic Division:**
  Savannah District (6)
  Mobile District (2)
- **Great Lakes/Ohio River Division:**
  Louisville District (8)
- **Rock Island District (1)**

One additional space has been placed at Rock Island to assist with the Corps effort to provide typical ISO functions for the DPW. ➤

Staffing

Each ISO will be led by a GS 14 Supervisory General Engineer, who will lead a staff of four Interdisciplinary General Engineers—two GS13s, two GS 12s—and three Public Works Management Specialists—a GS13 and two GS 12s.

The basic charter of each office will be to address Master Planning & Design, RPMA Project Management, and RPMA Business Practices support to the installations they serve.

The team saw the staffs as needing to have exceptional knowledge of both the installation and MACOM and the Division/District worlds, including RPMA policies and regulations and the locations of expertise that could be tapped throughout the Corps. The team also saw a need to emphasize good communications and relations-building skills in the personnel who will staff the ISOs. "These folks have to be able to relate well to their installation counterparts, and they need good public relations skills!" said Kristine Allaman, Director of the Corps of Engineers Installation Support Center.

USACPW becomes CEISC

As of 1 October 1998, the U.S. Army Center for Public Works (USACPW) was renamed the U.S. Army Corps of Engineers Installation Support Center (CEISC). PWD

Goals:

National team members articulated many goals for the ISOs, but all could be summed up in a few primary ideas:

- Maintain the excellent services provided in the past by CPW.
- Support installations as they downsize still further.
- Enhance Corps/Installation partnerships and customer service.
- Strengthen Corps as a full-service, life-cycle management organization supporting OMA and RPMA needs for the Army.

Purpose, Mission, Operating Principles

Briefly, the ISO mission is to serve as regional direct support elements in service to Major Commands, Installation DPWs and other activities, offering technical public works, RPMA and O&M services and guidance within their Division's regional geographical area of operations.

The team emphasized the ISO's role as regional providers of one-stop, Corps-wide technical expertise to Army MACOMs and installations. The Offices should serve to augment the Project Manager (PM) forward concept and provide RPMA support at the installation, putting all Corps capabilities at the service of installation DPWs.

How will the ISOs operate? They will:

- Provide direct-funded, not reimbursable, services to Army customers for the first three years.
- Orient services toward O&M side of life cycle facility maintenance.
- Ensure that specialized services to DPWs remain accessible andavailable.
- Provide cost-effective service in a timely manner.

Services and functions

Common services the team recommended that the ISOs provide included:

- Marketing.
- Partnering.
- Project Development.
- Project Management.
- General Technical Support interface
- Real property / master planning / space management / property disposal / Chief Financial Office (CFO) Act assistance.
- Water / sanitary / environmental engineering programs, if these are not available at the local district level.
- Regional contract development / award / administration.
- Regionalized contracts.

Specialized and Centralized Services

Customers on the team asked to have special services like Fire Protection and Inspection, PAVER assistance and the like, to be provided from central locations. They felt this would increase efficiency and maximize the availability of the expertise once resident at CPW.

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20th Annual Secretary of the Army Energy Conservation and Water Management Awards

On 31 July 1998, Mr. Orsini, Deputy Assistant Secretary of the Army for Logistics and Special Assistant to the Secretary of the Army for Energy presented the 20th Annual Secretary of the Army Energy Conservation and Water Management Awards to the following installations and one individual:

- United States Army
  Aberdeen Proving Ground, MD
- United States Army
  Intelligence Center & Fort Huachuca
  Fort Huachuca, AZ
- Headquarters, Fort Carson
  Fort Carson, CO
- U.S. Army Armor Center & Fort Knox
  Fort Knox, KY
- Fort Myer Military Community
  Fort Myer, VA
- Headquarters, Fort Riley
  Fort Riley, KS
- Headquarters, 25th Infantry Division (Light)
  and United States Army, Hawaii
  Schofield Barracks, HI
- United States Army
  414th Base Support Battalion
  Hanau, Germany
- State of Nebraska
  Army National Guard
- State of Washington
  Army National Guard
- Headquarters, 70th
  United States Army Reserve
  Regional Support Command
  Fort Snelling, MN
- USAG-Fort McCoy
  Fort McCoy, WI
- David Osborn
  Rock Island Arsenal
  Rock Island, IL

In addition, each installation was awarded a check for $2,500 for their energy manager's outstanding contribution to the energy program.

- United States Army
  Aberdeen Proving Ground, MD
  James Branscome
  Sharon Conklin
  Barry Decker
  Joseph R. Dugan
  John Faries
  Ernest Flynn
  Shehreyar Husain
  Martin Thompson
  William T. Vincenti
- United States Army
  Intelligence Center & Fort Huachuca
  Fort Huachuca, AZ
  Craig Hansen
  William Stein
- Headquarters, Fort Carson
  Fort Carson, CO
  Steve Snyder
- U.S. Army Armor Center & Fort Knox
  Fort Knox, KY
  Gary Meredith
- Fort Myer Military Community
  Fort Myer, VA
  James Bruce Murphy
- Headquarters, Fort Riley
  Fort Riley, KS
  Steve Pientka
- Headquarters, 25th Infantry Division (Light)
  and United States Army, Hawaii
  Schofield Barracks, HI
  John Scott Bly
- United States Army
  414th Base Support Battalion
  Hanau, Germany
  Fred Pierre-Louis
  Karl-Heinz Schneider
- State of Nebraska
  Army National Guard
  Harold Bingham
  Samuel Traux
- State of Washington
  Army National Guard
  John Carlton
  Robert Green
- Headquarters, 70th
  United States Army Reserve
  Regional Support Command
  Fort Snelling, MN
  John Holland
- USAG-Fort McCoy
  Fort McCoy, WI
  Ann Olson
- Rock Island Arsenal
  Rock Island, IL
  David Osborn

The events started on the evening of 30 July, with a reception for the winners and their guests, hosted by LTG John G. Coburn, Deputy Chief of Staff for Logistics; and continued through 31 July, with a luncheon and awards ceremony conducted at Fort Myer. Other dignitaries in attendance at the awards ceremony included MG Robert Ivany, Commander, Military District of Washington (MDW); MG Stanley Heng, Adjutant General, Nebraska Army National Guard; MG Roger Schultz, Director, US Army National Guard Bureau; BG (P) Privratsky, Director of Transportation, Energy, and Troop Support; and BG James Collins, Jr., US Army Reserve 70th Regional Support Command.

Installations should start planning for next year's 21st Annual Secretary of the Army Energy Conservation and Water Management Awards (FY 98) nominations now. Installations should submit their nominations to their MACOM. The MACOM then forwards a nomination to the Army Energy Team, Logistics Integration Agency. IAW AR 11-27, next year's suspense for receipt of nominations is 15 February 1999. Site visits will then be conducted to determine 1st, 2nd, and 3rd place winners for the Regular Army; 1st and 2nd place winners for the Army Reserve; and 1st and 2nd place winners for the Army National Guard. PWD

Aberdeen Proving Ground accepts award for energy conservation

by Pat McClung

Aberdeen Proving Ground joined other Army installations as winner of the 20th Annual Secretary of the Army Energy Conservation and Water Management Award in the Active Army category.

"I am proud of the work that APG has done, and expect even more innovation next year," said COL Robert J. Spidel, APG Garrison commander, who attended the on July 31 ceremony at Fort Myer, Virginia, with personnel from APG.

Spidel credited APG's "Energy Team" with innovations in 1997 to save the post more than 250,000 million BTUs in energy and $2.5 million in energy costs.

As a center for Army materiel testing, laboratory research and military training, the post is home to more than 50 tenants and satellite activities. More than 7,400 civilians work at Aberdeen Proving Ground, and more than 4,000 military personnel are assigned here. In addition, there are approximately 2,500 contractor and private business employees working on the installation.

APG was cited for its continued progress in implementing a long-range plan for improving energy conservation. The efforts stem from a program entitled Project ACE, which stands for Aberdeen Proving Ground Conserves Energy. The program emphasizes prudent energy consumption by the installation and tenant organizations.

Educating the work force regarding the benefits of energy conservation and instilling motivation and accountability, such as assigning building energy monitors, was key to the success of Project ACE, according to LTC Thomas Kuchar, director of public works.

"We all know that our funding is tight, and it's going to get even tighter," Spidel said. "We are looking at many ways to cut costs, and energy conservation has been one of our most successful achievements. The compressed work schedule of alternating Fridays of has been a great help in further reducing energy costs.

APG's "Energy Team" displays the Secretary of the Army's Energy Conservation Award for 1997. From left are Barry Decker, Martin Thompson, William Vincenti, LTC Thomas Kuchar, Ernest Flynn, James Branscome, Shehreyar Husain and Gary Testerman. Not pictured from the team are Sharon Conklin, Joseph Dugan and John Faries. (Photo by COL Robert J. Spidel)

In FY99, we hope to improve our program by getting all of our tenant units to fully participate in a compressed work schedule."

APG is in the third stage of its long-range plan to improve energy conservation; this is the fourth time the post has received the Secretary of the Army Energy Conservation Award.

The first ACE Team, formed in 1996, comprised representatives from APG's largest tenants — the U.S. Army Research Laboratory, the U.S. Army Ordnance Center and School, the U.S Army Chemical and Biological Defense Command, Aberdeen Test Center, the Garrison — the installation energy conservation manager, and two energy specialists from Baltimore Gas and Electric.

The four largest tenants and the garrison occupy more than 80 percent of APG's buildings and area, and account for 90 percent of the energy use.

"By concentrating on the four top energy users, we made large strides improving energy conservation," said Gary Testerman, installation energy manager. "Innovative ideas and a positive attitude were key to APG's success."

Shutting down post-wide activities for four consecutive days during holiday weekends was an idea that was tried last Thanksgiving to see if cutting back on certain activities for a four-day period would save energy and money. Heating was curtailed in many buildings, and lights and equipment were turned off. As a result of the $63,000 saved during the long weekend, MG Edward L. Andrews, commander of the Test and Evaluation Command and APG, established 11 four-day holiday weekends throughout the year.

APG Garrison and many tenants established compressed work schedules where employees agreed to work more than eight hours a day, and in return get a normal workday off. Since many tenants agreed to take off the same day, APG's energy savings for 20 three-day weekends totaled $800,000 for 1997.

As a "Green Lights" Partner with the Environmental Protection Agency, APG completed lighting retrofits in about 300 buildings, totaling more than 5 million square feet of floor space and over 125,000 fixtures, reducing electricity demand by 6,000 kilowatt hours. This effort is saving at least 10 million kilowatt hours, and more than $600,000 per year. This is 60 percent of APG's total lighting retrofits.

As APG's partner in energy conservation, Baltimore Gas and Electric completed building lighting ➤

audits, and is scheduled to complete the retrofits ahead of schedule.

APG purchases steam as part of a partnership agreement with Harford county. The contract allows for a discount if APG returns more than 50 percent condensate, to the waste energy plant.

In 1997, APG completed enough leak repairs and new condensate repairs to return more than 65 percent. Environmental improvement funds paid for the repairs.

The energy and cost savings were a by-product of the partnership, saving $90,000 a year, Testerman said. In addition, the method of waste-to-steam saved five million gallons of fuel oil (119,048 barrels) per year.

Honored from APG's "Energy Team" were DPW employees James Branscome, Sharon Conklin, Barry Decker, Gary Testerman, Joseph Dugan, John Faries, Ernest Flynn, Shehreyar Husain, Martin Thompson, and William Vincenti.

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Department of Energy recognizes Army energy managers

The Department of Energy has selected the following Army recipients for 1998 Federal Energy and Water Management Awards:

Individual – Energy Efficiency/ Energy Management

Mr. Morgan Benson, Chief of Utilities, 26th Area Support Group, Germany.

Mr. Benson developed and implemented facility improvement projects that resulted in an 11 percent reduction in utility costs amounting to over $1 million saved annually.

Individual – Renewable Energy

Ms. Soheir Ibrahim, US Army Yuma Proving Ground, Yuma, Arizona.

Ms. Ibrahim partnered with the local utility on a Cooperative Research and Development project to pool resources and execute installation of a 100 KW photovoltaic system at a remote training range, avoiding substantial cost of installing new power lines while benefitting from the low-cost of renewable energy.

Individual – Exceptional Service

Mr. William Croom, Assistant for Supply to the Deputy Assistant Secretary of the Army for Logistics, Washington, DC.

Mr. Croom was instrumental in maintaining a successful Army Energy Program by ensuring energy management and awareness retain a highly visible position within the command structure of the U.S. Army and that we are a leader in energy reductions within the Department of Defense and the Federal Government.

Organization – Energy Efficiency/ Energy Management

Headquarters III Corps and Fort Hood, Colonel Richard Craig, Director of Public Works, Fort Hood, Texas.

The Fort Hood Energy Management Team met the challenge of an energy budget shortfall by implementing sound load management projects and reducing utility costs by $600,000 during fiscal year 1997. PWD

Professional Development

PROSPECT course for energy managers

The Energy Policy Act of 1992 (Public Law 102-486) established professional standards for federal energy managers. The standards required them to be proficient in the following six areas:

- Fundamentals of buildings energy systems.
- Building energy codes and applicable professional standards.
- Energy accounting and analysis.
- Life-cycle cost methodologies.
- Fuel supply and pricing.
- Instrumentation for energy surveys and audits.

Army PROSPECT Course #055, Energy Management in Existing Federal Facilities, provides the necessary instruction to fulfill those training requirements. Lessons are geared toward the technical side and give energy program managers, planners, and designers the background to select, analyze evaluate and design energy conservations measures into existing facilities.

Sessions of the course are usually conducted at the U.S. Army Corps of Engineers Professional Development Support Center in Huntsville; however, on-site sessions can be arranged.

The next scheduled session is 8-12 March 1999 at the USACE PDSC. Based on training requirements, the tuition cost for one session may be centrally funded. Installation energy managers interested in attending should contact their major command energy managers to forward nominations.

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Utility partnering for energy conservation and demand side management

by Julian T. Delgado and Sharon Shaddock

Through demand side management, the White Sands Energy Management technical team has radically changed its approach to solving problems.

The team has used new methods to maintain, repair, and upgrade existing facilities and facility energy systems.

The team turned to third party financing to perform projects with qualifying life cycle cost analyses and allowing the installation to pay off the debt service through utility and maintenance and repair (M&R) cost savings. They Demonstrated White Sands customer commitment by providing state-of-the-art facilities and services with increased efficiency of operations.

The Public Service Company of New Mexico presented the White Sands technical team with the initial proposal and concept for a program they called the New Mexico Initiative (NMI). They offered to design, competitively procure, construct, finance and service this unique program ***at no capital cost*** to White Sands. The Commander was first briefed in August 1995, and a Preliminary Energy Audit was conducted by the Public Service Company of New Mexico in December 1995.

Using the framework of a General Services Administration Areawide Utilities Services Contract, in July 1996, WSMR entered a partnership agreement with the Public Service Company of New Mexico. The agreement is structured using Department of Defense guidelines for an energy conservation demand side management program and fosters dialogue between the government and private industry. The first step was for White Sands to order a Feasibility Study based on the Preliminary Energy Audit.

The White Sands Contracting Team worked with a new contracting concept, and developed a mechanism to achieve significant savings.

The Public Service Company of New Mexico performed an installation-wide Feasibility Study, which evolved into a Master Plan for carrying out twelve Energy Conservation Measures (ECMS) over the next fifteen months. Implementation of the ECMs will save WSMR $2.1M per year in energy and related maintenance and repair costs. Delivery orders, financed for eight to ten years, will generate payback from savings in the installation's utility and M&R accounts. Surplus savings accrue to White Sands immediately, generating a direct benefit to the test customer and taxpayer.

Five energy conservation measures have been completed with annual savings estimated at $346,000:

- Replacement of the White Sands central steam plant.
- Construction of a Compressed Natural Gas Station.
- Replacement of a motor generator with a state-of-the-art Uninterruptible Power Source.
- Replacement of two over capacity and inefficient chillers at a deep space surveillance facility.
- Lighting retrofit at a laser testing facility.

Through the contract, White Sands and the Public Service Company of New Mexico have cut red tape and have empowered employees to improve customer service. Through their partnership, they have achieved several innovations.

Buydown or buyout of White Sands' debt service allows reduction of the debt at any time funds might become available. For example, if Federal Energy Management Program (FEMP) funds or other funding specific for energy and water conservation become available to the installation, the debt can be diminished or erased allowing White Sands to accelerate realization of full benefits. ➤

New central steam heating plant— these new 150HP high-efficiency boilers replaced three 130HP failed boilers.

Work classification funding. If funds specific for M&R are available to fund a Delivery Order, or if a customer desires to fund for a specific project, pay off is immediate. One such project has been fully funded by combining FEMP and customer dollars.

Packaging or bundling projects and delivery orders allows the installation to accomplish projects that might not otherwise qualify under the current Life Cycle Cost Analysis criteria. For example, Automatic Meter Reading (AMR) is a desirable tool for energy management and for Measurement and Verification. Alone it will not qualify. Bundled with lighting, the payback criteria are met.

Unlike an Energy Savings Performance Contract, contractor operation and maintenance of equipment and systems is optional, allowing WSMR more contractual flexibility with existing inhouse or contracted personnel.

Measurement and verification of energy savings is optional. For example, lighting retrofits are proven energy savers.

The one-time savings guarantee assures White Sands the contractor has performed as required. The responsibility for continued savings rests with the government and in any resulting O&M contract. This eliminates additional contractual costs for subsequent annual measurement and verification by the contractor.

The NMI partnership has fostered dialogue between the government and private industry. The group has stepped far outside the normal boundaries to pioneer new and more efficient methods of providing energy efficient systems and infrastructure to all White Sands customers. The partnership is serving as the pilot program between the Public Service Company of New Mexico and all federal activities in New Mexico. Team members from the White Sands (energy engineering), contracting, and legal staffs, and the National Renewable Energy Laboratory (NREL), have all striven side-by-side with their Public Service of New Mexico counterparts to bring the projects into a comprehensive Energy Master Plan. Research of contract law has been conducted to assure no legal boundaries have been crossed. The partners have pushed the envelope and devised ways to say "we can!"

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Sharon Shaddock is a program analyst at White Sands Missile Range.

CERL adds resources to help energy managers

DPWs can take advantage of a newly expanded pool of experts for providing support to energy management initiatives. CERL has just awarded seven Indefinite Delivery — Indefinite Quantity (IDIQ) contracts to vendors representing both universities and the private sector.

The types of services offered are twofold: (1) help with energy supply system research, development, and demonstration, and (2) analysis of private sector energy supply alternatives. The first category includes tasks such as:

- Review and assessment of innovative energy supply technology
- Assessment and demonstration of advanced, cost-effective technologies for energy supply (e.g., boilers, cooling systems, incinerators, electric power generation)
- Evaluation of environmental pollutants from DOD energy supply systems
- Independent technical review of plans, engineering and reports
- Energy supply technology transfer and implementation activities.

The second task area covers electric, natural gas, steam/hot water, water, and wastewater utilities. Examples include assessments of:

- Privatization and contract operation alternatives
- Energy savings performance contracts options
- Utility supplier optimization options.

For more information, please contact Marty Savoie at CERL, 217-398-5505 or e-mail: m-savoie@cecer.army.mil PWD

Is your installation disclosing lead-based paint hazards?

A Navy installation in Texas with a small number of family housing units recently received a fine for over $400,000 from the Environmental Protection Agency (EPA). The installation was fined for not disclosing the lead-based paint hazards in family housing to new occupants as required by law, Section 1018 of Title X.

The requirement to disclose lead-based paint hazards in family housing was sent out to all MACOM Engineers in a 24 July 1996 memo from the Assistant Chief of Staff for Installation Management (ACSIM), with a required start date of 6 September 1996. It was reiterated in a 21 July 1997 memo from the Facilities and Housing Directorate (ACSIM), subject: Army Supplement to EPA Pamphlet Entitled "Protect Your Family From Lead In Your Home."

All MACOMs should check to see that their installations are complying with this disclosure requirement. EPA may start looking into this at other locations.

To receive copies of these memos, please contact Tim Ketchum, DAIM-FDH, (703) 428-7505 DSN 328, e-mail: KetchTW@hqda.army.mil PWD

Fort Eustis plugs up its leaks

by Daniel Wood

You'll have to search very hard to find any leaking faucets or toilet tanks at Fort Eustis, Virginia. With some painstaking efforts, minor adjustments and retrofits totaling about $100,000, our installation has reduced its water consumption by 21.5 percent or 116 million gallons of water per year. In FY97, we saved $197.590! Thanks to our reduced potable water consumption, the water utility (Newport News Waterworks) avoided using 4,586 pounds of chlorine, 1,455 pounds of zinc orthophosphate, and 7,703 pound of alum for treatment.

How'd we do that? In March 1995, the Fort Eustis Directorate of Public Works formed a water conservation task force to review water use patterns and identify water conservation opportunities for Industrial, Residential and Commercial areas. Once this was completed, the task force began to implement projects that really work.

Here are some of the things we did to conserve water:

■ We contracted the Corps of Engineers Norfolk District with URS Consultants, Inc., and Vista Consulting, Inc. to perform a comprehensive water distribution analysis and water use and management study on Fort Eustis. They evaluated:

- 13 central heating plants
- All facility plumbing fixtures
- 343,321 linear feet of piping

Subsequently, our in-house staff made repairs, which contributed substantially to the total water savings efforts. These included fixing 20 previously unidentified leaks or breaks in the piping, repiping the sanitation plant chlorinating system and changing effluent used to treat wastewater in the final process, and modifying the boiler plant, including steam trap/electric condensate pumps to pressure powered. Locating distribution leaks and simple retrofits alone save approximately 720,000 gallons of water per day!

■ The post energy manager performed a cross-section poll of residential appliances and fixtures (showerheads, faucets, sinks, toilet tanks) to evaluate flow rates and per use consumption. Based upon these results, we purchased water conservation kits for our family housing Preventive Maintenance team. Now when the quarters are unoccupied, the team changes out showerheads and bathroom aerators and uses a dye pellet to test for leaks in toilet tanks. In addition, we are installing low-flow showers in our lodging facilities.

■ During our field investigation, we inspected our large indoor pool at Anderson Field House, vintage 1950, for leaks and reevaluated the design of its skimmer and recirculation system. We discovered that our pool was designed with a skimmer system that dumps directly into the sanitary sewer. A repiping modification of the old system to recirculate through our sand filtration system has saved more than $52,680 in heating, chemicals use, and makeup water. We also changed the sand pool chlorinating process so that now we use well water instead of paying for city water when filling or treating the pool.

While we feel confident that we have made great strides in water conservation at Fort Eustis, we are not content to rest on our laurels. Our ongoing goals and objectives include updating our water consumption and cost chart monthly and posting it in the working areas of team members. Periodic pats on the back and words of encouragement also go a long way as we seek out and test new technologies that may help us in the future. Finally, when consumption starts creeping back up, we plan on commissioning another leak survey.

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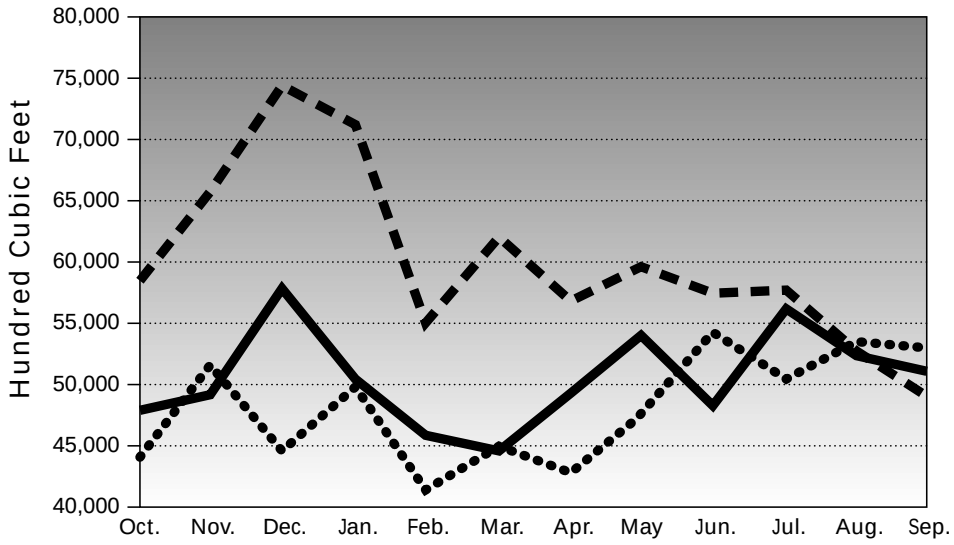

FY96 - $k	99.24	111.84	126.58	121.29	93.75	105.25	96.64	101.56	98.29	101.14	92.24	85.81
FY97 - $k	76.80	90.63	78.02	86.91	72.29	78.52	74.97	83.50	99.96	93.98	99.45	101.01
FY98 - $k	87.56	89.74	105.79	92.50	83.97	81.58	89.92	99.75	89.99	109.85	104.21	99.01

Fort Irwin, California, has already reduced its energy consumption to 43 percent below the 1985 baseline. As a result, the installation has received ***six*** *awards from the Department of Energy,* ***top prize*** *in the Secretary of Army Energy Awards,* ***two*** *awards from the local utility company and* ***one*** *renewable energy award from the Sierra Club.*

Deregulation: effects on energy savings performance contracts

by Rene Quinones

Deregulation of electric power is now a reality in California. Fort Irwin studied this concept for 2 years before implementing it 5 months ago, and the effects are very apparent.

It is important that installations understand the difference between deregulation and privatization. Privatization of an electric distribution system is the selling of the electrical grid, power lines, transformers, etc., to a private or regulated corporation. It has nothing to do with power consumption. It does however affect your utility account, the "J" account. In a regulated environment, you receive one bill from your utility company. This bill includes the cost of the power you consume and the cost of transmitting the power to your location via the off-installation electric grid.

When you privatize your system, you have two bills to track. The first bill is the cost of maintaining the sold off system. Yes, there is a cost. Just because you no longer hold title doesn't mean the maintenance to the grid is free. It is generally a percentage of the value of the system you sold plus improvements that bring it up to code. This percentage will vary from state to state, from contract to contract.

When your electric grid is sold off, you will still get a bill from the utility that supplies your power. Prior to deregulation, it will be the same company that currently bills your location. After deregulation, it may be some other company.

In 1998, the State of California began the process of deregulation by allowing an immediate 10 percent rate reduction for residential customers. Industrial rates were not affected. Industrial rates are generally 15 to 20 percent lower than residential rates, so the initial savings were passed on to residences first.

In March 2002, industrial rates will be fully deregulated. The initial impact of this action is the elimination of the "Competition Transition Charge," known as CTC. This charge is also referred to as stranded investment recovery. California is allowing utilities to maintain an artificial rate structure that assists them in recovering costs that cannot be passed on to consumers after March 2002 (decommissioning of a nuclear power plant, outstanding loans, etc).

At Fort Irwin, this CTC cost varies monthly from a low of $103,000 in January to a high of $389,000 in July. This rate is calculated on the difference between what a utility company pays for power and what they charge you. The rate structure in California is frozen, so the CTC is the difference between the frozen cap and the cost of doing business. If the price of power goes down, your rate stays the same but the difference between the cap and the cost of doing business widens so the utility recovers some of its investment. If the price of power goes up, the gap between the cap and the cost of doing business decreases and the utility recovers less of their stranded costs.

In March 2002, the CTC goes away, so the price of power will decrease without any contractual change on the customers part.

The net effect of this process is that when you perform an economic analysis of an energy savings performance contract (ESPC) contract or any energy savings venture, the sudden drop in the price of power in a deregulated market will impact your calculations immediately. Projects that had a payback of 8.5 years may suddenly have a payback of 11 years.

DESC, along with other federal agencies, is looking for ways to buy power at reduced rates in California and elsewhere. DESC has already awarded one contract in California. DOD is allowed to participate in power procurement in a deregulated state. Currently, there are different opinions on which path is the best to follow. The process is new and untried, so various locations are looking into different approaches. All of these will be looked into after a year and revised guidance will be forthcoming.

The bottom line is that energy savings projects are going to be affected by deregulation. You should give serious consideration to changing your energy plan from a BTU to square foot ratio program to a financial program that projects what the price of power will be and develop a program that merges privatization, deregulation, and energy savings initiatives into one package. Energy savings are going to become harder and harder to achieve in a deregulated marketplace. If you do not have a financial plan that shows at what point in time an economical project becomes an uneconomical project, you may find yourself spending money on studies that will never be accomplished.

POC is Rene Quinones, (760) 380-5048 DSN 470, e-mail: quinoner @irwin.army.mil

PWD

Rene Quinones is currently the Master Planner and Energy Manager at Fort Irwin, California.

Energy managers energize at annual workshop

The U.S. Army Center for Public Works, recently renamed the Corps of Engineers Installation Support Center, sponsored the Army Utility and Energy Training Workshop 28-30 July 1998 in Alexandria, Virginia.

Over 100 energy managers from installations and MACOMs attended the workshop. Speakers/presenters represented the Secretary of the Army, Department of Army, Department of Energy, Defense Energy Support Center, U.S. Army Center for Public Works (now the Installation Support Center), ACSIM, Huntsville Engineering Center as well as five installations and engineering consultants and contractors.

The conference provided comprehensive information on the following topics:

- Energy Savings Performance Contracting (ESPC)
- Utility Partnering/Demand Side Management
- Department of Energy Federal Energy Management Program (FEMP)
- Defense Energy Support Center assistance to facilities
- Renewable Energy
- Energy Awareness Seminars
- Energy Manager Training
- Energy Audit and Retrofit Contract
- Water Conservation
- Utility Assistance Programs
- Privatization of Utility Systems
- Army Utility Modernization Program

Attendees indicated that the training workshop was very informative and timely, although some expressed concern about who will sponsor future energy training workshops, in light of the current reengineering of Corps of Engineer functions. Attendees also expressed concerns regarding whom they will be able to call for quick response to technical energy questions and brainstorming energy conservation ideas once the Center for Public Works is disestablished.

On the subject of energy funding, Special Assistant to the Secretary of the Army for Energy, Mr. Eric Orsini, provided insight for future energy funds which are dwindling. ACSIM energy personnel pointed out that there are no projected Army funds dedicated to energy programs after FY 99. Several speakers discussed energy savings performance contracts (ESPC), making the point that due to lack of funds, they see ESPC as the wave of the future.

If you're interested in seeing the slides presented at the conference, browse through the CEISC web page (http://www.usacpw.belvoir.army.mil) under "information."

POC is Harry Goradia, (703) 806-6111 DSN 656, e-mail: harrygoradia@cpw01.usace.army.mil PWD

Automation

Web-based energy reporting

by Ken Zandler

One hundred ninety three active Army, Reserve and National Guard sites currently use the PC-based Revised Army DUERS Data System (RADDS) to report energy consumption and fuel inventories. PC RADDS works well for most users; however, it does require the user to consistently implement a multi-step file generation and transfer process. The reporter provides the file transfer software.

The Installation Support Center (CEISC), formerly US Army Center for Public Works, has contracted for the replacement of RADDS. The replacement system goals include a simplified reporting process and a Windows user interface.

The new software will likely be a Worldwide Web (Web) application, with the data and application software residing on a server at Fort Belvoir. Menus and forms will be generated by an applet or small program that is downloaded to the reporter's personal computer each time. The user interface and data validation would be similar to PC RADDS and would work like other Windows applications.

Reports, including automatic margin and font selection, will be generated on the server and downloaded for viewing and printing. Word processing software provides these functions for the current PC RADDS. MACOM and DA users will use the same Web access to get energy reports.

Reporters will use their Internet access and a browser, latest version, like Netscape Navigator or Microsoft Internet Explorer. The Internet access would have to be reliable and fast enough to transfer 60 to 100 KByte applets.

The ISC's Engineering Directorate sent a memorandum to MACOM Energy Coordinators requesting that they identify any known problems implementing a Web application. The new software should be available in four to six months. The ISC would like to address any Internet, browser or PC problems prior to that time. Please provide comments to Ken Zandler at 703-806-6239 or e-mail: ken.w.zandler@cpw01.usace.army.mil. PWD

Ken Zandler works on energy reporting issues in CEISC's Engineering Directorate.

Fort Sam Houston: New HVAC controls improve comfort, save energy

by Dana Finney

Recent innovations by Fort Sam Houston have placed control over barracks heating and cooling in the hands of the unit non-commissioned officer in charge (NCOIC). A graphical interface links a new HVAC control strategy to the NCOIC's personal computer, which allows at-a-glance troubleshooting and energy management.

"If you could spend one night in a barracks where you can't control the temperature, you would know how uncomfortable it can be," said William Blount, Acting Director of Public Works at Fort Sam Houston. "We can improve our soldiers' quality of life by giving them a greater degree of control over heating and cooling."

Fort Sam Houston's DPW has been working with CERL to demonstrate programmable logic controllers (PLCs), industrial-grade devices that provide direct digital control of HVAC systems. The newest building to receive PLCs is the Basic NCO 900 area Academy barracks complex. The entire system is monitored and operated from a remote PC located in the office of the NCOIC, SSG Everett Sigler.

"Having control over our complex allows us to better manage the facilty," said SSG Sigler. "The help screens in the system are easy to understand and explain how to correct minor problems. We can fix some reported comfort problems without having to place a work order. Or if a work order is required, we can give the craftsmen a detailed description about the problem."

Unlike standard commercial DDC HVAC control systems, the PLCs have an open communications protocol that allows flexibility and supports future expansion for either stand-alone or networked monitoring and remote control. According to CERL's Richard Strohl, "Commercial control systems use a one-size-fits-all concept. With the industrial-grade PLCs, the user defines all the operating parameters and develops a program to perform the control strategies needed for the specific conditions."

SSG Everett Sigler controls temperature in the barracks from a remotely located PC.

All that sounds complicated, but thanks to another feature of PLCs, it is completely transparent to the operator. That's the option to add off-the-shelf, non-proprietary programs like the graphic interface used for the barracks complex. The interface, in effect, provides a map of the HVAC components and flags trouble spots. It then offers help in identifying a fix or guidance for seeking outside assistance.

"We're operating in an era where we have to design for neglect," said Gene Rodriguez, designer in the Engineering, Plans and Services Branch at Fort Sam Houston. "A smaller in-house O&M staff means that, in designing control systems, we have to consider equipment's ability to operate with minimal maintenance." Rodriguez also noted that cooperating with occupants in managing the building's temperature has reduced the number of complaints to O&M staff about being too hot or too cold.

Besides improving the indoor climate at the barracks, the PLC system supports Fort Sam Houston's energy conservation goals. SSG Sigler has control over each room in the building and can set temperatures depending on occupancy. "Because we are a training unit, our occupancy fluctuates with each class," he explained. "With this system, we can operated our buildings more efficiently by overriding the setpoint in rooms that are unoccupied. We're taking greater responsibility for energy conservation in this way."

In addition, the DPW energy office can override setpoints to achieve electrical peak shaving. Using a global operating feature in the system, Rodriguez can raise all the setpoints with just one command. "Raising setpoints by a few degrees allows us to shed electrical loads at critical times without the occupants being aware of any change," he said. "We like to think of it as 'stealth' energy management."

The successes with Fort Sam Houston's industrial-grade PLCs has led the DPW's decision to specify them for all future rehabilitation and new construction. Especially attractive to the DPW is the vendor independence. To compete for projects with the PLCs, vendors will be required to interface their products between the expanded HVAC system and the existing PCs operating the utility control system. In addition, operators will only have to learn to use one control system—not the multiple types as is common on most installations.

For more information on HVAC controls, please contact Richard Strohl at CERL, (217) 352-6511, ext. 7570 or toll-free 800-USA-CERL, e-mail: r-strohl@cecer.army.mil; or Gene Rodriguez at Fort Sam Houston, Texas, (210) 295-4765. Also refer to an article in *Installations*, "HVAC Controls — What's the Right Choice," April-June 1998. PWD

Dana Finney is the chief of the Public Affairs Office at CERL.

Energy reporting with RADDS

by Ken Zandler

In October 1996, the U.S. Army Center for Public Works, now the Installation Support Center (CEISC), began fielding the Revised DUERS Data System (RADDS) to energy reporting installations. Utility or petroleum data or both are currently reported by 193 active Army, Reserve and National Guard sites using the RADDS personal computer based software. PC RADDS provides energy consumption and fuel inventory data to a RADDS Army-wide database accessible to MACOM headquarters and Department of the Army users.

Energy reporting becomes a five-step process with PC RADDS:

- Preparing the data.
- Entering data into PC RADDS.
- Reviewing the data that will be sent to the HQ database.
- Generating an Export file.
- Transmitting the Export file.

A single report for each month is sufficient, although users may make partial reports or revise previous data at any time.

The energy data is prepared by summing costs and quantities and converting consumption values to the required units of measure. Separate totals are required for each product and for mobility, family housing, process, mobility substitution energy (MSE) and other buildings. Few installations report process or MSE consumption. Reporters should use a PC-based spreadsheet for these recurring calculations.

Reporters verify that the proper months and products will be included in the Export file. The Review report also gives the opportunity to verify the cost and quantity values. Reporters control which data are sent to the HQ database with the AChanges Since@ date parameter.

The Export file is generated by selecting Export from the main menu and Export again from the Export menu. The AChanges Since@ date is picked up from Review, but can be modified. The file name and location are determined by RADDS.

The Export file is sent to the HQ database machine using reporter provided software. The Internet file transfer protocol (ftp) is fast and easy. PCs with Internet access for email or Web browsing will usually have ftp. Frequently both DOS command line and Windows versions will be found. Web browsers that support entry of a userid and password will also transfer the Export file.

Users without Internet access must use a modem, terminal emulation software and the Kermit file transfer protocol. The Terminal and HyperTerminal accessories provided with all versions of Microsoft Windows work well. Users who are familiar with ProComm or VistaCom may also use these programs.

The majority of users accomplish the reporting process without trouble. Opportunities for failure include the following.

Sometimes the local information management people modify the system installation or implement short cuts that prevent RADDS from working correctly. Short cuts can also cause the wrong file to be transferred.

The data must be reported in the specified units. Electricity must be in megaWatt hours (MWh), natural gas must be in thousands of standard cubic feet (KSCF) and so on. Petroleum should be entered in barrels.

Too often users have sent the Review report rather than the Export file. Sometimes the report file is named the same as the Export file. The file formats are very different. Generally there is no reason to Save the Review report. If saved, the file name must not be the reporter's DODAAC.

Reporters sometimes fail to generate the Export file. CEISC can detect this, since the previous file will be resent to the HQ database. The file is only generated by selecting Export from the main menu and then Export again from the menu that pops up. Click on OK after checking the AChanges Since@ date parameter. Do not change the name of the resulting DAT file.

Finally, reporters will sometimes fail to transmit the file. Remember, RADDS depends on the reporter executing the entire procedure each month.

For technical support, user manuals or updated versions of the software, please contact Andrew Jackson at (703) 806-6065 DSN 656 or e-mail: andrew.m.jackson@cpw01.usace.army.mil PWD

Are you on the *Digest* distribution list?

If not, give Linda Holbert a call at (703) 428-7931 DSN 328.

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USACE continues relief and recovery efforts in Puerto Rico

by Scott Saunders and Homer Perkins

U.S. Army Corps of Engineers members direct the placement of the first temporary roof on a damaged structure in Las Piedras, Puerto Rico.

WASHINGTON, D.C. — Approximately 640 Corps of Engineers military and civilian members continue to work on hurricane relief and recovery missions in Puerto Rico, which total more than $880 million. This includes 23 additional quality assurance inspectors to aid the emergency roofing mission.

USACE planning and response teams are coordinating relief and recovery missions from the Federal Emergency Management Agency (FEMA) including debris removal, ice and drinking water, temporary roofing, emergency power generation, and damage surveys.

Emergency Roofing—USACE is working with contractors on the $250 million temporary roofing mission to repair dwellings across Puerto Rico. Initial damage estimates determined more than 95,000 houses have extensive roof damage.

Emergency Power—Elements of the 249th Engineer Battalion (Prime Power) are doing damage and repair assessments, delivery and set-up of emergency generators. Prime Power soldiers have installed 126 emergency generators. Members of the 249th have performed over 450 power assessments since September 23rd. USACE is working to secure 150 additional generators to support recovery efforts.

The Corps has contracted for 42 large capacity generators for delivery and installation in Puerto Rico. The generators will provide power for critical water plants and other key services.

The 249th Engineer Battalion is a USACE asset headquartered at Fort Belvoir, Virginia. The battalion is the Army's only internal power generation unit. It generates and distributes prime electrical power to support disaster relief and contingency operations. The battalion provides advice and technical assistance in all aspects of electrical power and distribution systems.

The battalion consists of a Headquarters and Headquarters Company, a Heavy Maintenance Platoon, two Prime Power line companies and the Prime Power School. Each line company has a company headquarters and four geographically dispersed, highly skilled platoons comprised of a warrant officer and fifteen noncommissioned officers. The platoons deploy in support of U.S. Army, DoD and federal agencies worldwide and are capable of setting up, operating and repairing medium to high voltage power generation and distribution systems.

Debris Removal—USACE is performing environmental assessments for debris disposal areas, and continues to work with the Environmental Protection Agency, FEMA and the Commonwealth government to determine the best means of disposal. The debris removal mission involves an estimated 1.8 million cubic yards of material.

Ice and Water—USACE continues coordination with FEMA and the Commonwealth to determine needs for ice and water. There will be barge shipments every other day until the ice and water missions are no longer necessary.

The Army Corps of Engineers has delivered 2.9 million gallons of water since September 23rd. USACE has approximately 11.6 million gallons of water under contract for delivery to Puerto Rico.

USACE has delivered approximately 12.4 million pounds of ice to Puerto Rico since September 23rd, and has 14.5 million pounds under contract for delivery. PWD

Scott Saunders, (202) 761-0012, and Homer Perkins, (202) 761-1807, are public affairs specialists in the Headquarters, USACE Public Affairs Office.

Energy Audit and Retrofit Program expands lighting services

by Jim Paton

When the Energy Audit and Retrofit Program was established, it was primarily geared toward upgrading fluorescent fixtures with energy saving T8 lamps and electronic ballasts. Execution was through a single indefinite delivery, indefinite quantity contract with firm fixed prices applicable to Army installations across the 48 United States. Based on lessons learned from projects completed to date, the scope of the program was expanded when the contract was recently resolicited and awarded.

The recent solicitation was awarded as a multiple award to three contractors, each with a term of one base year and four option years. Each of the contractors has already been issued delivery orders for lighting retrofit work at three different locations. The intent is to distribute work evenly among the three and avoid mixing multiple contractors at the same site. However, depending on performance, completion rates, and the size of the orders, work may be issued to those contractors with the best history for timely completion and quality work.

Services available include:

- Retrofit or replacement of fluorescent fixtures.
- Retrofit to compact fluorescent lamps.
- Replacement of exit signs to LED illuminated.
- Installation of motion sensors and reflectors.

New features include:

- Installation of a locking base for compact fluorescents.
- Replacement of emergency power battery packs to insure compatibility with new electronic ballasts.
- Upgrade of dimming ballasts to electronic.
- Installation of metal halide HID fixtures as replacements to high wattage incandescent fixtures.

Typically, these wide area IDIQ contracts offer very competitive pricing. For reference, the cost to retrofit a two-lamp, four-foot fixture is under $40 and the cost to replace an exit sign with LED and battery pack is under $100. Installations interested in executing lighting retrofit projects should consider using these contracts as a cost-effective and time-saving alternative to developing their own local contracts.

For more information, please contact Jim Paton, (703) 806-6091 DSN 656, e-mail: jim.b.paton@cpw01.usace.army.mil PWD

Jim Paton works on energy issues in the Mechanical and Energy Division of CEISC's Engineering Division.

Federal Supply System benefits overseas activities

Think your activity is remote? Then spare a thought for the U.S. Weather Service personnel stationed on a snowdrift in the middle of Antarctica. This customer called the Defense Supply Center, Richmond (DSCR) Customer & Weapon Systems Support office to ask, "Do your prices include delivery anywhere?" After a little research, the good news was Yes! Standard unit prices shown in FEDLOG and other official standard logistics systems always include delivery to any U.S. government activity worldwide.

Ordering national stock-numbered items through the supply system makes good business sense for the customer and the U.S. taxpayer. Whether you're in Antarctica or Augsburg, it's good to know that all procurement actions have been handled for you, prices are always in U.S. dollars, and prices always include delivery! Local purchase overseas often requires extensive procurement effort, payment in foreign currencies and dealing with firms having varying proficiency in English.

DLA's DSCR is the Lead Center for Aviation while also managing chemicals, batteries, industrial gases, packaged POL, and much more. DSCR strives to make communication easy for overseas customers. DSCR's web site address is http://www.dscr.dla.mil. You can browse the DLA Environmental Products catalog, among others, and find out much more about the products and services DSCR offers. There's also a link to DoD's Hazardous Technical Information Service (HTIS) web site for customers with questions on hazardous materials.

POC for antifreeze recyclers (hardware) is Mike Timms, equipment specialist, (804) 279-5529, e-mail: mtimms@dscr.dla.mil

POC for antifreeze, additives and other chemicals is Clifford Myers, chemist, at (804) 279-3995, e-mail: cmyers@dscr.dla.mil

POC for hazardous materials storage, transportation and disposal is DoD HTIS at (804) 279-5168, e-mail: htis@dscr.dla.mil

For information about DSCR'S Environmental Products Program, please call Stephen Perez, DSCR Customer & Weapon Systems Support office, (804) 279-6054 DSN 695, e-mail: sperez@dscr.dla.mil PWD

Prepare your heating boilers for winter

by John Lanzarone

Get your heating boilers ready for the winter season! Follow these steps to prepare your systems for cold weather operation and avoid unexpected equipment failure:

1 Have a qualified person disassemble the low-water cutout and makeup-water feeding device. Clean, recondition, and test before the boiler is put into service.

2 Clean burner assembly and adjust combustion controls for maximum efficiency.

3 Test the safety/relief valve for freedom of operation. After the boiler is operating, check that the valve reseats properly.

4 Check all pressure and temperature controls and gauges, and clean the water-level gauge glass so that it indicates proper water level at all times.

5 Repair or replace any leaking pipes or fittings on the boiler or anywhere throughout the heating plant.

6 Insulate water lines exposed to freezing temperatures. Steam and condensate lines should also be insulated to reduce energy losses and for safety concerns. Some steam traps are subject to freezing so be careful when selecting trap types.

7 Check all mechanical equipment, such as fans and pumps, for smooth operation and proper lubrication.

8 Establish and maintain a record of boiler operation.

9 Clean boiler heating surfaces of all deposits to avoid wasting fuel and potential problems with the boiler. Inspect refractory.

10 Clean the boiler water surfaces if the boiler design allows; otherwise, consider using a suitable chemical to minimize buildup of scale and prevent corrosion.

The following steps should be performed:

For Steam Boilers:

Check condensate float valve.
Check pressure controls.
Check condensate return pump(s).
Check condensate tank.
Check feed and transfer pumps.
Check draft fans/switches.
Check gas safety switches.

For Hot Water Boilers:

Check circulating pump system.
Check water cutoff.
Check water feeder.
Check shutoff valves.
Check temperature controls.
Check draft system.

For more tips and information about heating systems, please call John Lanzarone, (703) 806-6067, e-mail: john.r.lanzarone@cpw01.usace.army.mil PWD

John Lanzarone is an engineer with the Mechanical & Energy Division in CEISC's Directorate of Engineering.

Installation Support Center offers boiler safety inspections and much more

by John Lanzarone

You may know that the Installation Support Center (CEISC) has a multi-year contract to perform boiler safety inspections. But did you know that the scope of our contract includes much more than the boiler inspections required by Army Regulation (AR)?

Our contractor can also perform deaerator tank inspections (to include ultrasonic and wet fluorescent magnetic particle examinations), unfired pressure vessel integrity studies, ultrasonic thickness testing of unfired pressure vessels, and failure analysis of boilers for the Army. All of the services available under this contract are offered on a reimbursable basis.

Remember that AR 420-49 requires all high pressure steam boilers (above 15 psig) and all high temperature water boilers (above 250_F) to be inspected annually. The AR requires these inspections be performed in accordance with the Code of Boiler and Pressure Vessel Inspectors and the American Society of Mechanical Engineers (ASME). To ensure these annual safety inspections are performed at TRADOC and FORSCOM installations, these two MACOMs centrally fund these inspections for their installations.

However, the AR does not address inspection requirements for other unfired pressure vessels located within the typical boiler plant. Of special concern are deaerator tanks, air receiver tanks, and cascade heaters. These tanks function with little need for maintenance, and it can be forgotten that they are ASME pressure vessels. While Army sites are not generally subject to state boiler rules and regulations, it's interesting to note that some states require recurring inspections of these unfired pressure vessels. Since many of the deaerator tanks, air receiver tanks, and cascade heaters in the army inventory are over 30 years old, maybe it's time they receive more than a cursory exterior visual inspection.

If you'd like more information about the contract or to request an inspection, please call Phil Conner, the contracting officer's representative, at (703) 806-6068 DSN 656, e-mail: phil.j.conner@cpw01.usace.army.mil PWD

Problems at Fort Tank

The Utilities Division was going through a massive reorganization and most people's minds were not on their work as they used to be. Joe Sparks had been the electrical engineer in that group for over ten years. The general office conversation revolved around why change something that has worked so well over the years. "If it works, don't mess with it."

Just then Joe received a call from Mr. Shell, the facility manager, at the Army Secure Communications Facility (ASCF). There had been a lightning storm the previous night. Normal operation is to parallel the standby generator plant during bad weather to increase system reliability because electrical outages are a frequent occurrence in the area. Last night the generators would not synchronize with the utility bus. Although the area outages that occurred last night did not effect the ASCF, Mr. Shell expressed concern as to why the system did not operate as it should have.

The ACSF critical power system consists of three 300 KVA UPS modules with generator backup that consists of four 4.16 kV volt, 1000 kW yellow colored diesel engine generators. The output of the generator plant supplies power to the complete building load via the utility transformer secondary circuit breakers and four 4.16 kV-480 volt 750 kVA transformers located throughout the building. The substation for this building consists of a 34.5 -4.16 kV, 5 MVA wye grounded to delta transformer. The secondary switchgear consists of one main circuit breaker and five feeder breakers. CBs 1, 2, 3, and 4 each supply power to a 750 kVA transformer. CB 5 connects the standby generator plant.

During parallel operation, generator #1 is designated the lead machine and is the first to be synchronized with the utility. Then generator #2 comes on line followed by #3 and #4.

Mr. Shell and Joe spent the day checking the system but not finding any problems. That night over dinner, Joe started to talk about the "complaints" in the office, repeating the saying "if it works, don't mess with it." That's when Mr. Shell indicated that one of the generator control system sensing PTs recently did not completely pass a maintenance check and was replaced. That comment sent a mental alarm to Joe. He asked to look at the maintenance logbook when they returned to the post.

The logbook indicated that the load side sensing (synchronizing) PTs were replaced with wye-grounded PTs on unit #1. Mr. Shell indicated that the original PTs were delta-wye grounded, but the replacement PTs were 30 percent cheaper. Joe smiled and said, "They may be cheaper, but how much is it worth to you to have your mission up and running?" Joe told Mr. Shell to replace the PTs with the original types, and went on to discuss why.

The line side of the generator breaker is referenced to ground, where as with a secondary delta utility transformer the reference is not to ground. When you use wye grounded PTs on an ungrounded system, your reference point is not fixed (it's floating). The comparison voltages across the synchronizing CB sometimes cannot match (depends on load). As a result, the system will sometimes synchronize and sometimes it will not.

As Joe explained, "If something doesn't work, try to think of what was recently done to it."

POC is Ron Mundt, CEISC-EE, (703) 806-5181 DSN 656. PWD

Fluorescent light retrofit alternatives

by Dennis Vevang

An energy conservation study was conducted at Fort Lesley J. McNair, Washington, D.C., to evaluate retrofitting outdated fluorescent light systems with available newer technology systems. This study was performed on an office building that originally had 40-watt T-12 fluorescent lamps and magnetic ballasts in all luminaries. The original configuration was first retrofitted with 32-watt T-8 fluorescent lamps and fixed-arc electronic ballasts. The second retrofit replaced the original luminaries with 32-watt T-8 fluorescent lamps and Flexiwatt Automatic Adjusting Electronic Ballasts (AEB).

The AEB system automatically adjusts the light level. First, each ballast is initially adjusted to provide the proper level of light for its given location. Then, the AEB's control system automatically and continuously monitors the ambient light and adjusts the output to maintain the desired level of light at all times. On sunny days, less light is required in the building because of the natural light coming through the windows. The AEB system provides only enough energy to supply the light that is needed.

The results of the study showed that the original system required 16.10 kilowatts of power. The fixed arc electronic ballast and 32-watt, T-8 lamps required a power of 10.42 kilowatts, while the AEB system with T-8 lamps required only 6.76 kilowatts. Compared with the original system, the fixed arc electronic ballasts reduced the power consumption by 35.3 percent and the AEB system reduced the power consumption by 58.0 percent. The AEB system, when compared to the fixed arc electronic ballast system, reduced the power consumption by 35.1 percent.

Although the AEB system costs more to install, it has the lowest annual operating expense. Compared to the fixed arc electronic ballast system, the AEB system has a simple payback of less than 7 years.

For more information, please contact Dennis Vevang, CEISC-EM, (703) 806-6071 DSN 656, e-mail: dennis.i.vevang@cpw01.usace.army.mil PWD

Dennis Vevang is a mechanical engineer in the Mechanical & Energy Division of the Installation Support Center.

Lower prices and minimums on Closed Loop Rerefined Oil Program

On 1 October 1998, Defense Supply Center Richmond lowered the prices on every NSN on the Closed Loop Re-refined Oil Program. To accommodate the smaller customer, new minimums became available. See the new prices and quantities listed below. You may also use your IMPAC card to order from this program. Simply submit your order through DoD Electronic Mall: www.emall.dla.mil.

On the Closed Loop Re-refined Oil program, the contractor supplies the re-refined oil and picks up used oil to be re-refined again. Safety-Kleen was awarded the national contract that applies to all federal agencies within the continental United States (CONUS). Simply order re-refined oil on the program, and you can have your used oil picked up at no additional cost. Your installation can realize substantial savings by participating in this program. You'll never have to pay to have your used oil removed again.

Here's how it works:

Delivery:

- Seven days after Safety-Kleen receives your order.

Used Oil Pick-up:

- Minimum pick-up quantity is 55 gallons.
- Pick-up is within 72 hours.
- May have multiple pick-up sites.

Quality:

- U.S. Army Tank-Automotive and Armaments Command approved.
- Meets American Petroleum Institute's performance classifications.
- Meets warranty requirement for gasoline and diesel equipment manufacturers; call the number listed in this article forstatements.

Customers:

- Any Military or Federal customer can participate within continental US.

Ordering:

- Ordering is easy; no application is necessary.
- MILSTRIP/FEDSTRIP.
- FAX: (800) 352-3291.
- Phone (800) 345-6333, DSN 695-5698.
- IMPAC card through e-mail (www.emall.dla.mil).

NSNs (FY 99 Prices):

NSN	Viscosity	UI	FY 99 Price
10W30 IAW CID A-A-52039			
9150-01-438-5875	10W30	BX of 12	$10.65
9150-01-438-5882	10W30	CN (5 gl)	$16.16
9150-01-438-5891	10W30	DR (55 gl)	$147.07
9150-01-438-5933	10W30	GL (bulk)	$2.30
15W40 IAW CID A-A-52306			
9150-01-438-5905	15W40	BX of 12	$10.33
9150-01-438-6064	15W40	CO (5 gl)	$16.16
9150-01-438-6066	15W40	DR (55 gl)	$149.80
9150-01-438-6071	15W40	GL (bulk)	$2.35
15W40 IAW Military Specification MIL-L-2104			
9150-01-438-6076	15W40	QT	$1.02
9150-01-438-6082	15W40	CN (5 gl)	$15.25
9150-01-438-6079	15W40	DR (55 gl)	$160.02
9150-01-438-6084	15W40	GL (bulk)	$2.50

MINIMUMS

12 QT	1 CO	1 DR
1 BX	1 CN	200 GL

Is the maintenance of your vehicles outsourced? The contractor can also use this program. For additional information or a copy of the brochure, please call Kim Holland, product executive for re-refined motor oil, at (804) 270-3855 DSN 695 or (800) 345-6333. PWD

Easy to order KFM coolant purification system

The KFM Coolant Purification System is a commercial product that has been tested and recommended for DOD use by the U.S. Army. It comes in four variants and there are models with one and two sets of filtration tanks, both of which are available in 110V and 220V versions. The 220V version is commonly used in Europe.

The machines are offered on an electronic contract with direct vendor delivery (DVD). A handy startup kit is also readily available on a blanket purchase agreement (BPA). The kit includes enough supplies to recycle approximately 80 gallons of coolant. Defense Supply Center, Richmond has done the contracting for you, ensuring that you receive a quality product at a reasonable price. All you have to do is order the machine you need and a startup kit. You can also order parts and chemicals in the quantities you need after getting experience with the system. All of the NSNs are found in the DLA Environmental Products catalog under Support Equipment/Recycling Products (FY99 prices).

1 Coolant Purification System w/1 set of tanks,P/N CC14250-01-380-9047 .....$9,096.07

2 Coolant Purification System w/2 sets of tanks,P/N CC24250-01-380-9034 .....$10,130.58

3 European (220V) model w/1set of tanks,P/N CC1E4250-01-390-4379 .....$10,173.88

4 European (220V) model w/2 sets of tanks,P/N CC2E4250-01-390-4378 .....$15,398.79

5 Startup Kit for recycling approximately 80 gallons of coolant, 6850-01-411-6651 .....$650.15

PWD

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